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First report of *Leiochrides australis* Augener, 1914 (Polychaeta, Capitellidae) from the Mediterranean Sea and notes on the genus *Leiochrides*

Première signalisation de l'espèce Leiochrides australis *Augener, 1914 (Polychaeta, Capitellidae) en mer Méditerranée et notes sur le genre* Leiochrides

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ABSTRACT

Gravina M.F., E. Mollica, A. Somaschini, 1996 - First report of Leiochrides australis *Augener, 1914 (Polychaeta, Capitellidae) from the Mediterranean Sea and notes on the genus* Leiochrides. Mar. Life, **6** (1-2): 35-39.

The first record of Leiochrides australis *(Polychaeta, Capitellidae) from the Mediterranean Sea is reported. Seventy-six specimens were collected on hard bottom with photophilic algae and on* Posidonia oceanica *bed at various sites along the Italian coasts. A comparison with type material and other Australian specimens was also carried out.*

RÉSUMÉ

Gravina M.F., E. Mollica, A. Somaschini, 1996 - [Première signalisation de l'espèce Leiochrides australis *Augener, 1914 (Polychaeta, Capitellidae) en mer Méditerranée et notes sur le genre* Leiochrides]. Mar. Life, **6** (1-2) : 35-39.

L'espèce Leiochrides australis *(Polychaeta, Capitellidae) est signalée pour la première fois en mer Méditerranée. Soixante-six spécimens ont été récoltés dans les peuplements algaux de l'infralittoral rocheux et dans l'herbier de Posidonie. Les spécimens méditerranéens ont été comparés avec le matériel type d'Augener et d'autres spécimens australiens.*

INTRODUCTION

Capitellidae Grube, 1862 are very common, particularly on soft bottoms. Amaral (1980) published a schematic representation of 40 genera belonging to this family. Five other genera have also been described: *Amastigos* Piltz, 1977; *Dodecaseta* Mc Cammon and Stull, 1978; *Baldia* Garwood and Bamber, 1988; *Pseudomastus* Capaccioni Azzati and Martin, 1992; *Pseudonotomastus* Warren and Parker, 1994.

The genus *Leiochrides* was proposed by Augener (1914) for *L. australis* from Southern Australian coasts. At present seven species of *Leiochrides* are known. In addition to the type species *L. australis*, *L. africanus* Augener, 1918 was reported from Western, Southern, Eastern Africa (Day, 1967; Thomassin, 1970), and from the Gulf of Suez (Amoureux *et al.*, 1978); *L. biceps* Hartman, 1954 from Marshall Islands; *L. branchiatus* Hartman, 1974 from Eastern India (Bengala Gulf); *L. hemipodus* Hartman and Barnard, 1960 from California (Hartman, 1961) and Western Mexico (Fauchald, 1972); *L. norvegicus* Fauchald, 1964 from Western Norway; *L. pallidior* (Chamberlin, 1918) originally referred to the genus *Notomastus*,

was reported from Northern and Eastern Pacific Ocean (Berkeley and Berkeley, 1942; Hartman, 1961).

The presence of the genus *Leiochrides* in the Mediterranean Sea has been detected by some authors, but no specimen was identified at the species level (Harmelin, 1964; Gravina and Somaschini, 1990; Lanera *et al.*, 1989).

In this paper, the first record of *Leiochrides australis* from the Mediterranean Sea is reported.

MATERIAL AND METHODS

Samples of an area of 400 cm^2 (20 x 20 cm) were scraped off by scuba diving on rocky bottom and the epifauna was collected. Samples of rhizomes of *Posidonia oceanica* were taken by means of a hand net measuring 20 x 20 x 15 cm.

The specimens were fixed in 10 % formaldehyde, sieved with a 0.5 mm mesh and preserved in 70 % alcohol. Some Mediterranean specimens were prepared for scanning electron microscope examination and were photographed. For histological investigation, 5-10 µm thick sections were cut with a microtome in order to check the existence of branchiae.

EXAMINED MATERIAL

Seventy-six specimens of *Leiochrides australis* were collected at various sites along the Italian coasts (table I).

One type specimen of *Leiochrides australis* from Augener's collection (Sharks Bay, Australia, staz. 15; 1905) described by Augener and one specimen collected and identified by Hartmann-Schröder, preserved in the Zoological Museum of the University of Hamburg (V10048 and P16856 respectively) were compared with the Mediterranean specimens. Besides, six specimens of *Leiochrides sp.* from the coast of South-East Australia (preserved in the Australian Museum of Sidney: W17515, 2 specimens; W196204, 1 spec.; W17513, 2 spec.; W16380, 1 spec.) were also examined.

DESCRIPTION

Complete specimens are 15-27 mm long with 48-66 setigers. Some smaller specimens measure 9 mm with 39 setigers. They are colourless in alcohol and the thoracic epitelium is smooth.

The thorax consists of twelve setigers. The prostomium is a short, blunt, rounded lobe with two large irregularly shaped eye spots partially covered by the peristomium. The peristomium and the first thoracic segment lack setae. The twelve thoracic setigers which follow are biramous with capillary setae at noto and neuropodia (figure 1a).

All the abdominal setigers have long-handled hooded hooks only. Each hook has a big main fang surmounted by a crest consisting of one large and numerous smaller teeth (figure 1d, e, figure 2). The hooks are numerous per fascicle and are arranged in single row (figure 1f). Branchiae are absent (figures 1a, 1b). The pygidium is simple, rounded and smooth, without anal cirri (figure 1c).

HABITAT

Most of the Mediterranean specimens of *L. australis* were collected on rocky bottom with photophilic algae. The most abundant of them were: *Corallina elongata, Dictyota dichotoma, Halopteris scoparia, Padina pavonica, Halimeda tuna, Ulva rigida, Codium bursa, Udotea petiolata.* One specimen was also found on artificial substrata with algae, mussels and barnacles. Some other

Table I - Sampling sites of the individuals of *Leiochrides australis*. RBPA: rocky bottom with photophilic assemblages; AS: artificial substrata; PB: *Posidonia oceanica* bed. BAUUR: Authors' collection in the Dip. di biologia animale e dell'Uomo, Università La Sapienza, Rome; BAUC: Authors' collection in the Dip. di biologia animale, Università of Catania./*Sites de récolte des spécimens de* Leiochrides australis. *RBPA : peuplements algaux de l'infralittoral rocheux ; AS : structures artificielles ; PB : herbier de Posidonie. BAUUR : collection des auteurs dans le Dip. di biologia animale e dell'Uomo, Università La Sapienza, Rome ; BAUC : collection des auteurs dans le Dip. di biologia animale, Università di Catania.*

Sea	Locality	Habitat	Depth	Number on individuals (Coll.)
Tyrrhenian	Ponza Island (Latium)	RBPA	5-20 m	5 (BAUUR)
Tyrrhenian	Civitavecchia (Latium)	RBPA	1-5 m	8 (BAUUR)
Adriatic	Brindisi (Apulia)	RBPA	0-20 m	19 (BAUUR)
Adriatic	Brindisi (Apulia)	PB	7-11 m	4 (BAUUR)
Ionian	Catania (Sicily)	RBPA	2.5 m	37 (BAUC)
Ionian	Augusta (Sicily)	RBPA	12-16 m	2 (BAUC)
Ligurian	Vado Ligure (Liguria)	RBPA (AS)	2 m	1 (BAUUR)

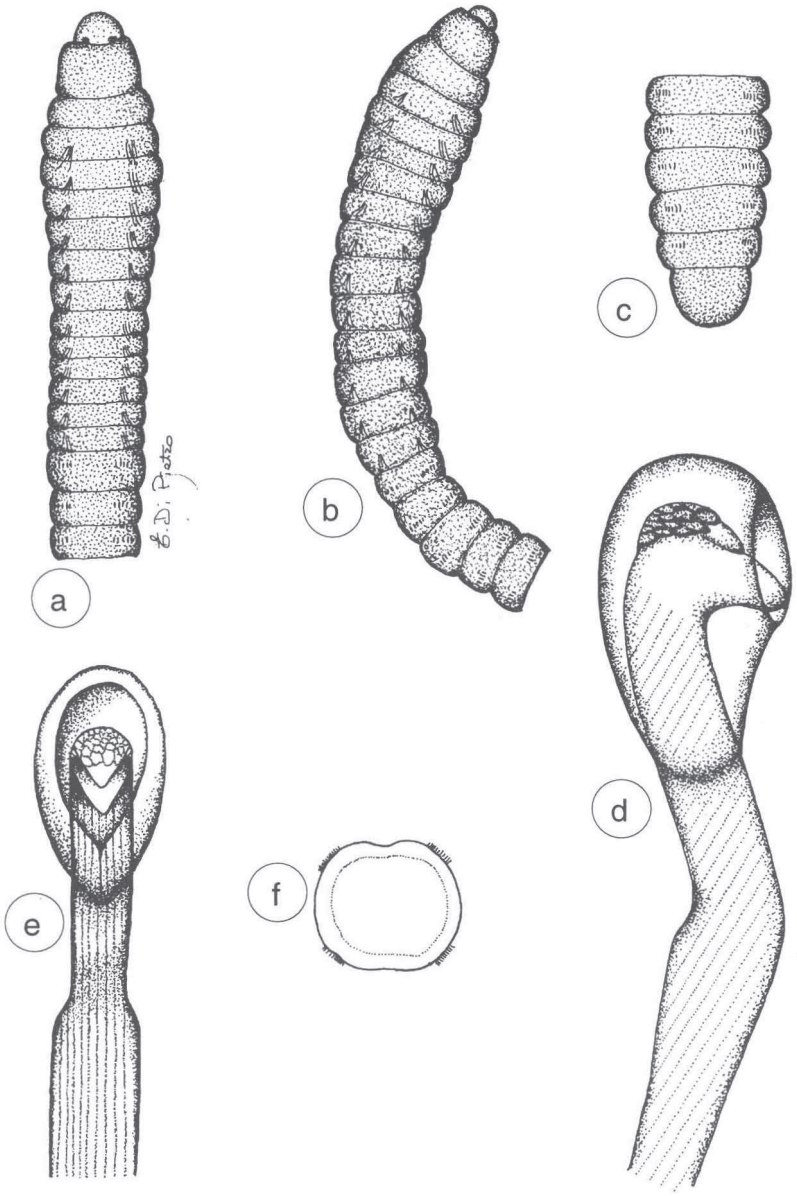

Figure 1 - *Leiochrides australis*: anterior end dorsal view (a); lateral view (b); posterior and dorsal view (c); hooded hook lateral view (d); tip of abdominal hook frontal view (e); cross section of a medial abdominal segment (f)./ Leiochrides australis : *région antérieure, face dorsale (a) ; de profil (b) ; extrémité postérieure face dorsale (c) ; crochet encapuchonné de profil (d) ; crochet face (e) ; section transversale de la région abdominale moyenne (f).*

individuals were found among the rhizomes of the seagrass *Posidonia oceanica* (table I). Similarly, Australian specimens were collected in the *Posidonia australis* bed and on rocky bottom with algae and oysters.

DISCUSSION

The peculiar character of the genus is the presence of twelve thoracic setigers, like *Scyphoproctus* Gravier, 1904 that differs in absence of bifid pygidium with acicular spinae. All the specimens described in this paper have twelve thoracic segments with capillary setae and a rounded pygidium without acicular spinae, so permitting their attribution to the genus *Leiochrides* and excluding attribution to the genus *Scyphoproctus*.

Mediterranean specimens of *Leiochrides* correspond to the type material and to the other Australian specimens in all the diagnostic characters. We determined the specimens of the Australian

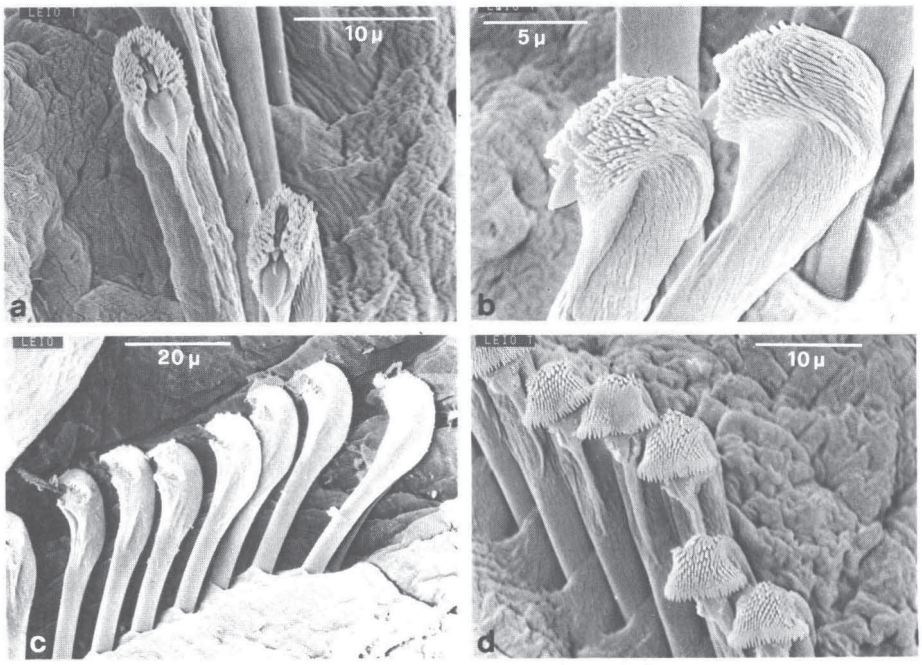

Figure 2 - SEM micrograph of uncini of Mediterranean specimens of *Leiochrides australis*: frontal view (a); detail (d); lateral view (c); detail (b)./*Photographies au microscope à balayage des crochets abdominaux de* Leiochrides australis *: vue frontale (a) ; détail (d) ; vue latérale (c) ; détail (b).*

Museum of Sydney as *L. australis* according to the original description by Augener (1914) and that by Hartmann Schröder and Hartmann (1980).

Diagnostic characters useful to distinguish *L. australis* from the other congeneric species are: shape of prostomium and pygidium; presence of eyes and branchiae; number of apodous segments following the prostomium; setation of thoracic and first abdominal segments (table II).

Originally Augener (1914) described the genus *Leiochrides* with thirteen thoracic segments (including twelve setigers), in addition to the peristomium. Afterwards most of the species attributed to the genus were described with only one apodous smooth ring following the prostomium and twelve thoracic setigers. Only for the type species *L. australis* and for *L. norvegicus* were two apodous segments reported, but in the description of the latter species, Fauchald (1964) considers them as two peristomial segments. Furthermore, in the original decription of the genus by Augener, the branchiae are absent, while most of the species of *Leiochrides* were described with branchiae. Consequently, there is some confusion about the identification of the genus and the attribution of the various species to it. A review of the typical material would therefore be useful to clarify these problems and to redescribe the genus and the species.

From the biogeographical point of view, the numerous reported records of *L. australis* during the last few years along the Italian coasts suggest its

Table II - Main characters distinguishing the species of the genus *Leiochrides* (C : capillary setae; U : hooks). /*Principales caractéristiques des espèces du genre* Leiochrides *(C : soies capillaires ; U : uncini).*

Species	Prostomium	Eyes	Thorax notopodium neuropodium	Abdomen notopodium neuropodium	Branchiae	Anal cirri	N. of achaetous segments
			CC..... C	U			
L. africanus Augener, 1918	rounded	absent	CC..... C	U	2-4 lobes	absent	1
			CC..... C	U			
L. australis Augener, 1914	rounded	present	CC..... C	U	absent	absent	2
			CC..... C	U			
L. biceps Hartman, 1954	bifid	absent	CC..... C	U	absent	absent	1
			CC... . C	U			
L. branchiatus Hartman, 1974	rounded	absent	C..... U	U	branched	present	1
			CC..... C	U			
L. hemipodus Hartman, 1960	rounded	absent	C..... C	U	3-12 lobes	absent	1
			CC..... C	CCU.....U			
L. norvegicus Fauchald, 1964	rounded	absent	C..... C	UUU.....U	filiform	present	2
			CC..... C	U			
L. pallidior Chamberlin, 1918	rounded	absent	CC..... C	U	absent	absent	1

recent colonization of the Mediterranean Sea by passive contemporary dispersal. It must be noted in this regard that the passive introduction of species has become a common phenomenon in recent years, among Polychaetes (Gambi *et al.*, 1990) and other marine invertebrates (Chapman and Carlton, 1991; Lopez de la Cuadra and García Gómez, 1994). On the other hand, the alternative hypothesis of an ancient Tethyan relict can be rejected owing to the exact similarity between the Mediterranean and Australian specimens.

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